17. The method of claim 1 wherein the second encapsulating agent forms a second encapsulating polymer selected from the group consisting of: formaldehyde copolymers, polyisocyanates, a polyacrylamide, and phenoxy resin.

18. The method of claim 17 wherein the second encapsulating polymer is selected from the group consisting of: ureaformaldehyde resin, melamine formaldehyde resin, polyisocyanates, phenol formaldehyde resin, resorcinol formaldehyde resin, butylated urea formaldehyde resin, glycoluril formaldehyde resin, and methylolacrylamide.

31. The method of claim 30 further comprising the steps of combining the product of claim 30 with a water-dispersible polyisocyanate based on hexamethylene diisocyanate and heating the resulting combination to a temperature above about 40° C.

Please cancel claim 15.

Attached hereto is a marked up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version with markings to show changes made"

REMARKS

Election of Species

Two election of species requirements were set forth in the Office Action. (1) The Examiner noted that the application contains claims directed to two species of micro encapsulation-namely single walled and double encapsulation. Claim 1 has been amended above to describe a process for preparing the double encapsulated product. Such process is shown, for example, in examples 1, 2 and 4. Applicant reserves the right to file a divisional application directed to the single walled encapsulation process.

(2) The Examiner noted that the application contains claims to several species of polymer types. Applicant hereby elects the process in which the first encapsulating agent is a styrene maleic anhydride copolymer and the second encapsulating agent is a formaldehyde copolymer. It is believed that all of the amended claims are generic to these species.

Rejections under 35 U.S.C. 112

Claims 4, 18 and 31 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner noted that "urea" is misspelled in claims 4 and 18 and that claim 31 depends on itself. These typographical mistakes have been corrected in the above amended claims.

Rejections under 35 U.S.C. 102(b)

Claims 1-4, 7-9, 15-18, 21-23, 26, 28-30 were rejected under 35 U.S.C. 102(b) as anticipated by Curtis et al. U.S. 5,462,915. "(Curtis)". Curtis relates to a micro encapsulation process used with agrochemicals in which a formaldehyde prepolymer is used as the encapsulating agent. Curtis does not disclose the double encapsulation process described in the amended claims herein.

Claims 1-4, 7-9, 15-18, 21-23, 26, 28-30 were rejected under 35 U.S.C. 102 (b) as anticipated by Nastke et al. U.S. 5,788,991. "(Nastke)". Nastke relates to a process for preparing coated microparticle agglomerates in which the microparticles are stirred in a suspension with a polymer which is first precipitated on the microparticle surfaces, after which

the coated microparticles are isolated, dispersed in the aqueous suspension, and stirred to form clusters which are isolated, following which the coated clusters are again dispersed and stirred to form agglomerates.

Claims 1-4, 7-11, 13, 14, 21-23, 26-30 were rejected under 35 U.S.C. 102 (b) as anticipated by Takahashi et al. U.S. 4,557,755. "(Takahashi)". Takahashi relates to a micro encapsulated agricultural chemical in which the agricultural chemical is encapsulated in one step utilizing a combination of a cationic urea resin, an anionic surfactant and a formaldehyde prepolymer.

Claims 1-2, 4-7, 21-23,26, 28, 29 were rejected under 35 U.S.C. 102 (b) as anticipated by Scher U.S. 4,140,516. "(Scher)". Scher relates to a process for encapsulating a water-immiscible material within a polyurea shell involving the use of a phase transfer catalyst.

Claims 1-3, 8, 10, 21-28 were rejected under 35 U.S.C. 102 (b) as anticipated by Jensen et al. U.S. 3,069,370 ("Jensen") or Lo-EP-0551796. ("Lo"). Jensen relates to a process for encapsulating a lipophilic material in a styrene-maleic anhydride copolymer. Lo relates to a process for preparing microcapsules by reacting to polymer forming substances in the presence of a surfactant which is a partial ester of a styrene-maleic anhydride copolymer. The Examiner specifically referred to claim 12 of Lo which recites a concentration of from 100 to 700 grams of microcapsules per liter. The relevance of this claim to the present invention is not totally understood.

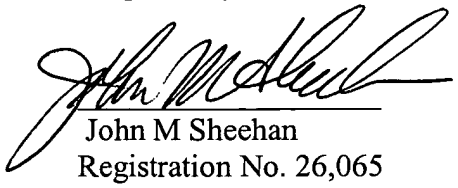
Rejections under 35 U.S.C. 103(a)

Claims 1-31 were rejected under 35 U.S.C. 103(a) as unpatentable over Takahashi et al. U.S. 4,557,755 in view of Curtis et al. U.S. 5,462,915 or Nastke et al. U.S. 5,788,991 and Scher U.S. 4,140,516. The disclosures of Takahashi, Curtis, Nastke and Scher have been discussed above and that discussion is equally applicable to the section 103(a) rejection. Simply put, none of these references, in the combinations set forth by the Examiner, suggest a double encapsulation process utilizing two separate encapsulating agents as required by the amended claims.

In view of the above amendments and remarks, it is submitted that the present invention is clearly distinguished from the references cited by the Examiner and that the amended claims should be allowable.

The Examiner is respectfully requested to contact the undersigned at the telephone number set forth below if the Examiner has any questions or comments.

Respectfully submitted,



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Please forward all future correspondence relating to this application to:

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Version with markings to show changes made.

IN THE CLAIMS:

1. A method of encapsulating a chemical agent comprising:

(a) combining, in an aqueous solvent, particles of a chemical agent suspended in the aqueous solvent and an encapsulation effective amount of a first encapsulating agent; {~~and~~}

(b) converting the first encapsulating agent to an encapsulating polymer, thereby forming encapsulated particles of the chemical agent; ~~and~~

(c) combining the encapsulated particles of step (b) with a second encapsulating agent.

4. The method of claim 3 wherein the encapsulating polymer is selected from the group consisting of: ure a formaldehyde resin, melamine formaldehyde resin, phenol formaldehyde resin, resorcinol formaldehyde resin, butylated urea formaldehyde resin, polyisocyanate, glycoluril formaldehyde resin, and poly(methylolacrylamide).

8. The method of claim 2, wherein the converting is according to (i) and the method further comprises: (c) reacting the encapsulating polymer with a first curing agent.~~:~~

~~(c)~~

16. The method of claim 1~~5~~, further comprising heating the combination of step (~~d~~c) to a temperature of at least about 40° C.

17. The method of claim 1~~5~~ wherein the second encapsulating agent forms a second encapsulating polymer selected from the group consisting of: formaldehyde copolymers, polyisocyanates, a polyacrylamide, and phenoxy resin.

18. The method of claim 17 wherein the second encapsulating polymer is selected from the group consisting of: ure a formaldehyde resin, melamine formaldehyde resin, polyisocyanates,

phenol formaldehyde resin, resorcinol formaldehyde resin, butylated urea formaldehyde resin, glycoluril formaldehyde resin, and methylolacrylamide.

31. The method of claim 30 further comprising the steps of combining the product of claim 3~~1~~0 with a water-dispersible polyisocyanate based on hexamethylene diisocyanate and heating the resulting combination to a temperature above about 40° C.